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DECLASS REVIEW by NIMA/DOD

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Ad Hoc Committee for J-3 Systems Capabilities
Minutes for Meeting #3 25X1A
Date: 6 March 1968
Location: National Photographic Interpretation Center
Prepared
Attendees

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-Bi-Color Summary

25X1A A review of the entire bi-color history and test program was given by The following is a summary of the briefing given the Committee:

Original Justification for Bi-Color

1. To produce high-resolution "color" using black and white film.

2. To produce color without interfering with the photointerpreters normal job.

3. Investigate multi (bi) spectral aspects; i.e. using two filters for spectral discrimination.

Work To Date

A summary of the work to date was given:

1. Several engineering operations were taken on CR-2 (1102). These used red (W/25) and green (SF-05) filters.

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3. Several evaluation tasks were laid on various organizations to evaluate the bi-color use; namely:

a. NPIC to evaluate the PI quality of the green vs. red record.
b. to make the best bi-color prints possible.

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4. The results of these evaluations were as follows:

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a. The NPIC evaluations were reported in [redacted] Both objective and subjective analysis was performed. The major conclusion was, "The general conclusion of the photointerpreters is that the majority of the requirements levied on the J-3 system could be answered with photography generated in the bi-color mode because when used in stereo, the two records compliment each other. In addition, the over-all information content of the photography exposed through the green filter is comparable to an average J-1 mission."

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b. [redacted] showed several of their bi-color samples. These were all made from the orthoprinted dupes. This gives best registration. The samples were the best bi-color ever made from a panoramic camera.

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[redacted]

Summary

25X1A [redacted] suggested three alternate conclusions that the Committee could recommend, namely:

a. More study is required on the bi-color technique.

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c. Bi-color is feasible and there is no technical or photo-interpreter reason why it cannot be done operationally.

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After much discussion among the group, the Committee decided on conclusion (c) above; that is, that there is no technical reason why operational bi-color should not be taken if COMIREX so desires.

25X1 -CR-3 Operations Plan

Filters Planned		Filter Factor
Forward looking	W-25 primary	3
	W-12 alternate	1 1/2
Aft looking	W-21 primary	2
	SF-05 alternate	2 1/2

1. Engineering Operation

Filter change from W-12 to W-25 with slit change from narrow to wider respectively

	4 ops (30 frames each)
SF-05/W-25	2 ops (17 frames each)
Mono	4 ops (12 frames each)

Mono operations were tested after mission termination on CR-1 and the end of the second bucket on CR-2. It appears that smear goes away about the 8th frame after mono start-up. Mono operations on CR-3 are to determine for certain the amount of film waste attributable to start-up smear.

Vehicle health checks are normally run every other day. Usually 12-15 frames are consumed by each check. The engineering operations listed above will replace health checks.

2. Estimated Engineering Film Usage

Preflight	100 frames
A bucket	137 frames
Health/Mono (60)	
W-12 to W-25 (60)	
SF-05 & W-25 (17)	
B bucket	137 frames
(Same distribution as A bucket)	

Considering thin base film, the percentage of film devoted to engineering is roughly 374/6150 = 6.1%. A 1500 ft. (per camera) tag on test strip of UTB will be flown on CR-3 and will raise the total footage slightly thereby reducing the percent above. is striving to keep engineering usage to about 5%;

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therefore, minor modification to the engineering plan above may result.

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--Summary of SO-180 and SO-340 Corona Marking

Results of the chamber tests with QR-2 are summarized in Attachment 2.

Both SO-180 (IR) and SO-340 (High Speed Night) were marked very badly at internal camera pressures and at pressures less than one micron. The marking was edge to edge and continuous throughout the format.

There appeared to be a relatively free window at 20 microns on both materials. The width of this window has not yet been ascertained.

As the pressure approaches 160 microns, the corona level is significantly reduced, disappearing entirely on SO-180 and becoming very light on SO-340.

Discussion--Future Experiments

CR-3

The Committee recommends bi-color operations against specific requirements with two engineering targets for comparison. UTB has been fully tested to the satisfaction of AP and . Test strips of SO-380 (UTB) will be flown.

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CR-4

A night test with SO-340 is presently planned. This may be changed to a 3400 sun line test pending the outcome of a 3400 test on March and the results of continued corona marking tests on SO-340.

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A test strip of SO-180 is also scheduled. Test targets were discussed, but will await final selection until the next Committee meeting.

CR-5

Tentative plans are to fly a 500-foot test strip of SO-121 color on this mission. Kodachrome II will not be ready for the CR-5 flight.

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Kodachrome II is still being evaluated as a [redacted] test. No machines are presently available to process 70 mm Kodachrome II. Also, it will take 6 to 8 months to get Kodachrome II on thin Estar base with pelloid backing. It is estimated that 12-15 months will be required to develop a processing capability. Until that time, 70 mm will be split and processed through the commercial 35 mm processors. A Kodachrome II test strip will be scheduled in about 8 months.

CR-6

25X1A [redacted] stated that the Shift Register is planned for CR-6; therefore, CR-8 was selected as the earliest time for a through focus test. CR-8 is scheduled to fly before CR-7.

25X1A For Revised Test Plan See Attachment 3.

[redacted] Three Questions for Committee Consideration 25X1A

1. Is it possible to cut selected portions of KH-4 mission material and to low gamma process it? [redacted] agreed that a test bed now in operation may be useable, but the jury rig used previously has been dismantled. Assuming that the test bed could be used only 100-150 feet could be handled at a time.

25X1A 2. What is being done about a slower speed higher resolution 3404? [redacted] will check.

3. Would high resolution black and white IR be useful for crop analysis? Committee generally negative--would rather wait for SO-180 results.

The meeting was concluded with the following action items:

25X1A 1. [redacted] will see if any development of half speed 3404 is underway.

2. [redacted] will determine status of the low gamma processing equipment.

25X1A 3. [redacted] to analyze the type 3400 film that is to be exposed [redacted] The purpose of the analysis is to determine the association of density recorded and ground illumination.

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25X1A 4. [redacted] was asked to accumulate information regarding the use of color film in the T-1 tracker camera. Since the scale of the tracker photography is close to that of the [redacted] camera system, it is expected to lend insight to the usefulness of small scale color photography.

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5. [redacted] will locate USIB document that specifies the priority of crop analysis.

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6. [redacted] is to locate VELA Uniform reports.

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Reviewed by [redacted]

Minutes App [redacted]

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